

REMARKS

Claims 1-25 are in the case. Claims 1-19 and 24-25 are rejected under 35 USC § 103 over USPA 2001/0039644 to Le Coz in view of USPA 2005/0104187 to Polsky. Claims 20-23 are rejected under 35 USC § 103 over Le Coz in view of USPN 6,677,169 to Li. Claims 1, 15, 20, and 24 have been amended. No new matter has been introduced by the amendments, which are supported by the disclosure of the original claims and the specification and drawings. Reconsideration and allowance of the claims are respectfully requested.

CLAIM REJECTIONS UNDER §103

Claims 1-19 and 24-25 are rejected over Le Coz in view of Polsky. Independent claim 1 claims, *inter alia*, a carrier substrate with an access region configured to facilitate backside access to the integrated circuit by removal of as much as all of the access region without damaging electrical integrity of any circuit traces of the carrier substrate. The combination of Le Coz and Polsky et al. do not describe such a combination of elements.

Applicants first compare the primary reference against the elements of the claim as recited above, to determine wherein the primary reference is deficient. Then the secondary references are analyzed to determine whether they compensate for the deficiencies detected in the primary reference. If all of the references are deficient as to the same element or combination of elements, then the claim is patentable over the cited references. As stated in the office action, Le Coz does not disclose an access region such as that described in the claim.

Polsky et al. do not remedy the deficiency of Le Coz. The office action states that Polsky discloses an access region positioned within the ring for backside access without damaging the electrical integrity of the carrier substrate, and lists some pinpoint citations, presumably in support of the statement. However, inspection of the reference at the pinpoint citations reveals that there is no description of such an access region at any of the referenced locations. Nor is there any such description anywhere else within the reference. Polsky et al. describe a packaged device, a wire bonded chip, vias, via placement, construction of an integrated circuit, and backside connection of an integrated

circuit, but do not describe an access region configured to facilitate backside access to an integrated circuit by removal of as much as all of the access region without damaging electrical integrity of any circuit traces of the carrier substrate.

Thus, claim 1 patentably defines over Le Coz in view of Polsky et al. Reconsideration and allowance of claim 1 are respectfully requested. Dependent claims 2-14 depend from independent claim 1, and contain additional important aspects of the invention. Therefore, dependent claims 2-14 patentably define over Le Coz in view of Polsky et al. Reconsideration and allowance of dependent claims 2-14 are respectfully requested.

As a further example of the patentability of the dependent claims, Le Coz in view of Polsky et al. do not describe the array of package connection pads having a perimeter depth substantially equal to a maximum number of signal traces routable between minimally spaced package connection pads. Again, the pinpoint citations to Le Coz say nothing about such a limitation. The office action states that perimeter depth and spacing are “user definable.” However, this is not an argument that makes the present invention obvious in view of the cited combination. Everything under the sun is “user definable,” but when an inventor discovers a novel, non obvious, and useful limitation, that limitation is patentable.

So it is in this case. It is true that Le Coz does not state that it is impossible to have a perimeter depth substantially equal to a maximum number of signal traces routable between minimally spaced package connection pads, but the fact that a reference is mute on a given point is not the test of patentability. Le Coz does not imply in any way that having a perimeter depth substantially equal to a maximum number of signal traces routable between minimally spaced package connection pads is beneficial, desirable, or contemplated. Polsky et al. do nothing to remedy that deficiency of Le Coz. Therefore, claim 3, one of the dependent claims, contains additional material that is further patentable over the cited combination of references.

Similarly, in regard to claim 4, the cited combination of references are completely mute as to the array of package connection pads having a perimeter depth that is less than a package connection pad spacing divided by a trace pitch. There is nothing in either of the references that indicates that they have such a perimeter depth, or that such a

limitation should be imposed on the design of a package substrate. In other words, the fact that someone *might* have fashioned such a package substrate does not indicate that someone *has* fashioned such a package substrate, or that any of the references *teaches* such a package substrate or makes it obvious. The argument in the office action is confusing what *might* be with what *is* taught by the cited references. This deficiency is present in every instance where the term “user definable” is employed.

Independent claim 15 claims, *inter alia*, a method for designing an integrated circuit carrier with backside access to an integrated circuit by reserving an access region for conducting backside access to the integrated circuit die, wherein no signal traces are disposed. The deficiency of the references in regard to this limitation is described above. Thus, claim 15 patentably defines over Le Coz in view of Polsky et al. Reconsideration and allowance of claim 15 are respectfully requested. Dependent claims 16-19 depend from independent claim 15, and contain additional important aspects of the invention. Therefore, dependent claims 16-19 patentably define over Le Coz in view of Polsky et al. Reconsideration and allowance of dependent claims 16-19 are respectfully requested.

Independent claim 24 claims, *inter alia*, a system for packaging and providing backside access to a wide variety of integrated circuits, including a circuit carrier with an access region configured to facilitate backside access to the integrated circuit die by removal of as much as all of the access region without damaging electrical integrity of any circuit traces of the carrier substrate. The deficiency of the references in regard to this limitation is described above. Thus, claim 24 patentably defines over Le Coz in view of Polsky et al. Reconsideration and allowance of claim 24 are respectfully requested. Dependent claim 25 depends from independent claim 24, and contains additional important aspects of the invention. Therefore, dependent claim 25 patentably defines over Le Coz in view of Polsky et al. Reconsideration and allowance of dependent claim 25 are respectfully requested.

Claims 20-23 are rejected over Le Coz in view of Li. Independent claim 20 claims, *inter alia*, a method for packaging and providing backside access to an integrated circuit by removing a portion of the cover within an access region in order to access a backside of the integrated circuit without damaging any electrical connectivity of the substrate. The deficiency of Le Coz in regard to this limitation is described above. Li

does not remedy the deficiency, in that Li describes damaging the electrical connectivity of the substrate, as graphically depicted in the figures. In fact, Li only retains the least amount of the circuitry of the substrate that is required to electrically access the die. All the rest of the circuitry of the substrate is removed by Li. This is very different from the present invention as claimed in claim 20, where backside access to an integrated circuit is provided without damaging any electrical connectivity of the substrate.

Thus, claim 20 patentably defines over Le Coz in view of Li. Reconsideration and allowance of claim 20 are respectfully requested. Dependent claims 21-23 depend from independent claim 20, and contain additional important aspects of the invention. Therefore, dependent claims 21-23 patentably define over Le Coz in view of Li. Reconsideration and allowance of dependent claims 21-23 are respectfully requested.


CONCLUSION

Applicants assert that the claims of the present application patentably define over the prior art made of record and not relied upon for the same reasons as given above. Applicants respectfully submit that a full and complete response to the office action is provided herein, and that the application is now fully in condition for allowance. Action in accordance therewith is respectfully requested.

In the event this response is not timely filed, applicants hereby petition for the appropriate extension of time and request that the fee for the extension be charged to deposit account 12-2355. If other fees are required by this amendment, such as fees for additional claims, such fees may be charged to deposit account 12-2252.

Sincerely,

LUEDEKA, NEELY & GRAHAM, P.C.

By: 

Rick Barnes, 39,596

2006.06.01